

The Pennsylvania Canals

BY

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Author of the Coal Regions of America, and A Geological
Railway Guide.



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THE PENNSYLVANIA CANALS.

By James Macfarlane, Ph. D.

Author of the Coal Regions of America, and A Geological Railway Guide.*

The Erie Canal was completed from Buffalo to Albany, in 1825. About this time the attention of the people of Pennsylvania was turned to the importance of improved inland navigation. Railroads were not in existence, and as the only navigable rivers in the state were the Delaware and the Ohio, a system of canals along the valleys of the rivers in the interior of the state, especially from Philadelphia to Pittsburgh, with a portage over the Alleghany Mountains, was thought to be the most feasible plan for improving the means of transportation. The state of Pennsylvania, after extensive preliminary surveys made in 1824 and 1825, entered in the year 1826 into the actual construction of an extended system of internal improvements and continued the annual expenditure of large sums of money for canals and railroads for fifteen years or until 1841. A vast debt was accumulated, upon which the state, for several years, was unable to pay even the interest, and work on all the canals was stopped. Sixteen years afterwards, the main line from Philadelphia to Pittsburgh was sold, and in the following year all the other canals were also disposed of. This ended the career of the state as a builder or owner of canals and railroads. Happily the state debt which was so rashly incurred is now practically all paid, and a proper conclusion of this narrative will be to tell how the government of this, one of the largest states of the Union, is now carried on more cheaply than any other of its size, and, strange to say, without any tax whatever upon real estate. To the older citizens of the state it will be interesting to recall the principal events of this period, and to those who are younger much of it will be new, and to residents of other states part of it may be instructive.

It is difficult for us to conceive the state of this country as to its facilities for transportation in early times. Before a turnpike was constructed across the Alleghany Mountains we are told that it required a good team of five or six horses, from eighteen to twenty-five days to transport from 2,500 to 3,500 pounds of goods from Philadelphia to Pittsburgh.

(*) An unpublished manuscript written in 1875, and read before the Historical Society of Western Pennsylvania, on February 23, 1915 by the author's son, the Hon. James R. Macfarlane.

After the completion of the turnpike across the mountains the same kind of teams carried 6,000 to 8,000 pounds; the trip was made in 12 or 15 days, and the price of carriage was from three to four cents a pound. After the building of the state canal and state railroads, the time was reduced to six or seven days and the cost to about one cent per pound. When the state projected these public works the results here spoken of were only a subject of conjecture, but the substantial fact was known that a great impulse had been given to the trade of New York City and to the general growth of the whole state of New York by the completion of the Erie Canal. It was necessary to do something for Philadelphia, and to facilitate the settlement of distant parts of the state, and to develop her great mineral and agricultural resources. This stimulated the patriotic people of Pennsylvania to commence the building of public improvements, which were projected on a grand scale, and their construction was prosecuted with a spirit and enterprise worthy of better success.

Ground was formally broken at Harrisburg for the building of the Pennsylvania Canal, at the expiration of the first half century of the republic, on July 4, 1826, a day which became memorable in the annals of the country by the death of Adams and Jefferson. By the Act of February 25, 1826, the Canal Commissioners were authorized to locate and put under contract a canal on the east side of the Susquehanna River from the mouth of the Juniata River to the mouth of the Swatara at Middletown. This was afterwards extended to Columbia, making in all 46 miles, and was called the Eastern Division of the Pennsylvania Canal. Like all the other state canals afterwards constructed, it was 40 feet wide at the water line, 28 feet at the bottom, with 4 feet depth of water; and the locks were 17 feet wide and 90 feet long. At the same time work was commenced on the western end of the main line from Pittsburgh to the mouth of the Kiskiminetas, and on another canal in the northwestern part of the state, from French Creek to Conneaut Lake, being a part of the canal intended to connect Pittsburgh with Lake Erie. In 1827 a law was passed to extend the first mentioned canal up the Juniata as far as Lewistown, also up the Susquehanna to Northumberland and up the Kiskiminetas and Conemaugh to Blairsville. Surveys were also authorized for a number of other canals which were afterwards begun; also for a railroad from Philadelphia to the Susquehanna, and for a route across the Alleghany Mountains from Frankstown on the Juniata River to Johnstown on the Conemaugh, to determine the problem whether the mountains

should be crossed by a smooth and permanent road of easy graduation or by a railroad with locomotives and stationary engines or otherwise. Work was also authorized to be commenced on the Delaware Division from Bristol northward, provided that the average expense should not exceed \$12,000 per mile.

But it was the Act of 1828 which fully committed the state to the whole of the proposed system of improvements. It authorized the extension of the canal on the Susquehanna from the mouth of the Swatara to Columbia; from Lewistown to Hollidaysburg on the Juniata; from Northumberland along the west branch of the Susquehanna to Bald Eagle, now Lockhaven; from Northumberland along the North Branch of the Susquehanna to the New York state line; from Taylor's Ferry to Easton on the Delaware; and from Blairsville to Johnstown on the Conemaugh; also the Philadelphia and Columbia Railroad and the Alleghany Portage Railroad, besides surveys for numerous other similar enterprises.

Thus it will be seen that within about two years the state, having become canal-crazy, embarked in the construction of a complete system of canals which with the two railroads mentioned were intended to extend to all parts of the state where rivers large enough to supply the necessary water, were to be found. It was a bold movement for the state of Pennsylvania, on March 4, 1828, to order a railroad to be put under contract from Philadelphia to Columbia on the Susquehanna, and another railroad across the Alleghany Mountains, 2325 feet above the sea, with a view to their completion within two years or as soon thereafter as practicable. It should be borne in mind that the improvements made by George Stephenson in the locomotive which first made it a really successful machine, were not tried until October, 1828. The use of steam on railroads was therefore unknown and the Liverpool and Manchester Railroad in England, which was begun in 1826, was not opened until September, 1830. Pennsylvania was therefore one of the pioneers in the modern railway system. The state of New York to this day has not built a single railroad. The building of canals should then have been suspended for all the money spent after that date was wasted.

The construction of these works was prosecuted with great energy. In 1832, 526 miles were finished and 673 miles by 1834. But the credit of the state was good, money was abundant, and the people of both political parties were strongly in favor of these internal improvements. Taxes were not increased and it was believed generally that the

canals connecting the eastern with the western waters of the state and with the lakes, would prove highly profitable as a means of revenue, besides greatly advancing the value of property of all kinds, and all industrial interests.

But unfortunately too extensive a system of public works was undertaken. Votes could not be obtained in the legislature for the main lines alone. The canals were not considered a doubtful experiment and it was argued that the people of all parts of the state were equally entitled to the benefit of the public improvements. Of course the works were not constructed or managed with economy. Millions were expended on lines, which to this day would have been unproductive, and in operating the finished lines. Party politics had much to do with the awarding of contracts and in the appointment of agents for the management of the finished works. The hopes of the friends of the canals in the amount of business done, never were realized, and the general result was a constant increase in the amount of the state debt. This debt at the close of 1828 was five millions of dollars. It was increased three millions in 1829, four millions more in 1830, two millions in 1831, and three millions in each of the years, 1832, 1833 and 1834, when it amounted to twenty-three millions of dollars, but it was only increased one and a half millions more in 1835. After these repeated increases had been made, a new source of revenue was found in the bonus derived from the incorporation by the state of the United States Bank, on February 18, 1836, after its re-charter by Congress had been vetoed by President Jackson. In consideration of the privileges granted, the bank was to pay the state a bonus of two millions of dollars within thirty days, another half million at the end of the year, to take six millions of dollars of the permanent loan of the state at four and five percent. interest, and one million dollars per annum as a temporary loan, making in all nine and a half millions of dollars to be appropriated to the public works. In addition the bank was to give one hundred thousand dollars per annum for twenty years towards the common or free school fund of the state, and to subscribe for three quarters of a million dollars of the stock of railroads and turnpikes in various parts of the state. The law was a new placer for the canal men to work. But with twelve and a quarter millions of dollars of its capital thus disposed of, it was no wonder the bank lived for only five years. The charter of the bank also unfortunately contained a repeal of the taxes for state purposes on real and personal property, for with so much money on hand, where was the necessity of taxing the people? The bargain with the bank proved disastrous

to both parties in the end. The state debt was reduced \$200,000 in 1836; it was not increased in 1837, and was only increased \$700,000 in 1838, when it amounted to twenty-five millions.

With the money derived from the bank, new surveys were made and further extensions of the canals authorized, making with the finished work one thousand miles. Through the influence of Thaddeus Stevens, who was then the leading man in Pennsylvania politics, a railroad was begun from Gettysburg, where he then resided, westward over the South Mountain, intended to connect with the Baltimore and Ohio Railroad and the Chesapeake and Ohio Canal in Maryland. It was a wild and extravagant scheme, the route being an extremely expensive one, the road, as was facetiously said, "beginning nowhere and ending in the woods." No less than \$700,000 was expended when by a change in the politics of the state, the work was suspended, and never resumed. (*) Equally extravagant was the extension of the West Branch Canal through the then untrodden wilderness of the Sinnemahoning country over the Alleghany Mountains to Lake Erie. How this canal was to be supplied with water is one of the mysteries of engineering, and how it was to yield any revenue is one of the mysteries of finance. Of course, a time came when all this must end. The failure of the United States Bank took place on February 4, 1841, followed by a panic and a suspension of specie payments, which brought the finances of the state to a crisis. The state debt had attained frightful proportions, having been increased seven millions in 1839, four millions more in 1840, and three millions more in 1841, making in all over thirty-nine millions of dollars; and afterwards it was swelled to \$42,000,000, an enormous sum for those times. The works had cost far more than was estimated, and the finished lines did not pay the expenses of operation and repairs. The state had borrowed until she could borrow no longer, without thinking much as to how she should pay, and worst of all she had no income from taxation. The interest however was paid for a year longer. Then came the darkest day in the history of Pennsylvania, and on July 1, 1842, the state was unable to pay the interest on her bonds. To pay the floating debt, (due chiefly to the contractors at the time the work on the canal was abruptly terminated in 1841,) state paper money in the form of bank notes, of the denomination of one and two dollars were issued through the medium of the state banks,

(*) This state railroad extended westward from Gettysburg and is not the present railroad from that place eastward.

to the amount of three million dollars, under a penalty to the bank which refused to issue its proportion. These notes were "payable in like currency" and were redeemable in state stocks in sums of \$100, and receivable in payment of debts due the state, and for deposit at the banks which issued them. This currency was known as Pennsylvania "relief notes" and of course became very much depreciated, especially as the state ceased to pay the interest on the state stocks into which the currency was convertible. After the credit of the state was restored these notes were redeemed at the Treasury, but their savor has lingered in the memory of some of our soft money philosophers and has probably suggested the proposed 3/65 United States bonds convertible into greenbacks, and vice versa, of which we hear so much lately.

The works for which this debt was incurred must be briefly described, for ancient history of defunct canals to be read in these busy times must be short. Most of their statistics and history are comprised in a following tabular statement. The canals were very similar in capacity to the old Erie Canal in the state of New York, before its enlargement, except that the locks were longer. They were built along the valleys of rivers subject to high freshets, some of them rising 20 feet or more, and the dams in the rivers, built to feed the canals, were a source of expense, being liable to be carried away by floods.

The Philadelphian and Columbia Railroad, the most valuable and important of the state works, was opened for use in April, 1834. For many years there was an inclined plane at the Schuylkill River 2805 feet in length with a rise of 187 feet. It was operated by stationary engines at the head of the plane which moved the endless rope to which the cars were attached. There was also a similar inclined plane at the Susquehanna at Columbia, but both of these were dispensed with before the state works were sold.

The Alleghany Portage Railroad extending from Hollidaysburg over the Alleghany Mountains at Blairs Gap to Johnstown, thirty-six and a half miles, was opened for use in March, 1834. It overcame an elevation of 1398 feet above Hollidaysburg and 1171 feet above Johnstown, the summit being 2325 feet above tide-water at Philadelphia. There were five inclined planes on each side of the summit, and eleven levels on graded lines of railroad connecting the planes, on which horses were used on the short levels and locomotives on the longer ones. The longest plane was 3117 feet in length with a rise of 307 feet, and the shortest 1480 feet in length rising 130 feet. Boats built in sections were carried over the

mountain. The Portage Railroad, with the Philadelphia and Columbia Railroad, and the connecting canals composed for a long time, one of the most important of the fast lines for travelling and the transportation of goods in the United States. We must not undervalue the works of our predecessors, which although they were temporary and have now become obsolete, yet were very important means in the early development of the business resources of the state and of our national wealth.

STATISTICS OF THE PENNSYLVANIA STATE WORKS.

Divisions	From	To	Miles	Begun	Finished
1. Delaware	Bristol	Easton	60	1827	1832
2. Phila. & Col. R. R.	Philadelphia	Columbia	80	1828	1836
3. Eastern	Columbia	Duncans Isl'd	46	1826	1832
4. Juniata	Duncans Island	Hollidaysburg	127	1827	1832
5. Susquehanna	Duncans Island	Northumberl'd	41	1827	1832
6. North Branch	Northumberland	Pittston	73	1828	1832
7. N. Branch Exten.	Pittston	N. Y. St. line	94	1836	1856
8. West Branch	Northumberland	Farrandsville	76	1828	1832
9. Wisconisco	Duncans Island	Millersburg	12	1836	(*)
10. Western	Johnstown	Pittsburgh	103	1826	1832
11. Beaver	Beaver	Newcastle	31	1831	1833
12. French Creek	French Creek	Conneaut Lake	22	1836	(*)
13. Erie	New Castle	Erie	105	1836	(*)
14. Sinnemahoning Ex	Farrandsville	Mouth of Sinnemahoning	36	1836	(x)
15. Portage R. R.	Hollidaysburg	Johnstown	36	1828	1834
16. Gettysburg R. R.	Gettysburg	Md. line	36	1836	(x)
Total			978		

(*) Finished by a canal company.

(x) Never finished.

The philippics of Sydney Smith, published in 1843, against Pennsylvania for the non-payment of her interest, will still be remembered by many. He said that he, in common with many other unwise people, had lent to the state of Pennsylvania, a sum of money for the purpose of some improvement. The amount though small was to him important, and was a saving from a life income, made with difficulty and privation. If the refusal of the state to pay had been the result of war produced by the unjust aggression of powerful enemies; if it had arisen from civil discord; if it had proceeded from an improvident application of means in the first years of self government; if it was the act of a poor state struggling against the barrenness of nature, every friend of America would have been content to wait for better times. But the fraud, said he, is committed in the profound peace of Pennsylvania, by the richest state in the Union, after the wisest investment of the borrowed

money in roads and canals, of which the speculators are every day reaping the advantage. It is an act of bad faith which, all things considered, has no parallel and no excuse.

He says to "the drab colored men" of Pennsylvania, as he calls them, "It is a sad spectacle to see you rejected by every state in Europe as a nation with whom no contract can be made, because none will be kept; deficient in the elements of good faith and who prefer any load of infamy however great to any pressure of taxation however light. Figure to yourself a Pennsylvanian receiving foreigners in his own country, walking over the public works with them and showing them Larcenous Lake, Swindling Swamp, Crafty Canal, Rogues Railroad and other dishonest works." He proved by calculation that a tax of one and a half percent on the incomes of the state, as reported by the census, would pay the interest on her debt, and that therefore one and a half percent was the price of national honor. "In the whole habitable globe they cannot borrow a guinea" he wrote, "they are powerless as an enemy that cannot draw the sword because they have not money to buy it. The bad faith of that state brings disgrace on all, just as common snakes are killed because vipers are dangerous." He suggested that the mercantile New Yorkers and the thoroughly honest people of Massachusetts in their European visits should wear a uniform with S. S. or Solvent States worked in gold letters upon their coats. Invoking the name of Mercury, the great god of thieves, he declared, "let no deluded being imagine that they will ever repay a single farthing." And he concluded, "having eased my soul of its indignation, and sold my stock for 40 percent discount, I sulkily retire from the subject with a fixed intention of lending no more money to free and enlightened republics."

The length of time during which the state continued to make no strenuous efforts to pay her debts, gave but too much ground for the unmeasured abuse which Sydney Smith so liberally bestowed on her. Whatever effect it may have had, it is certain that at the very next session of the legislature in April, 1844, a general law was passed imposing a tax of three mills on every dollar of valuation of all kinds of property in the state. Such a law should have been passed in 1841 and then no default would have taken place. There had been however several years of very hard times, but doubtless there were equally hard times for the creditors of the state.

Under the management of an efficient treasurer, James Ross Snowden, the state resumed the payment of the interest of the state debt on the first day of February, 1845, after

being in default two and a half years, and since that time she has always met her engagements.

✓ One of the canals that extended from Pittston to the New York state line near Athens was finished by the state in 1856 and sold two years afterwards. This and the newly graded railroad built to avoid the inclined planes on the Portage Railroad were the only works constructed by the state after the panic of 1841. It may be safely said that Pennsylvania will never build another, although there is no constitutional prohibition to that effect, unless the stringent provisions against incurring a large state debt may be considered as such. ^

It would be uninteresting to follow the history of the state works during the sixteen years from 1841 to 1857. It was not such as to justify a repetition of the attempt by a state to operate canals and railroads. Unfortunately the Pennsylvania canals were built just as the era of railroads began. The Pennsylvania Railroad Company was incorporated in 1846 and the road opened for traffic from Harrisburg to Pittsburgh on December 10, 1852, thus completing the entire line of railroad from the latter place to Philadelphia. Notwithstanding the tonnage tax provided for in its charter, imposed for the protection of the state canals on all freight carried during the season of navigation, the railroad soon became a strong competitor in the carrying of freight. In May 1857, after sustaining great losses in operating the canals, the legislature authorized the sale of the main line of the state public works, consisting of the Philadelphia and Columbia Railroad, the canal from Columbia to Duncans Island at the mouth of the Juniata, the Juniata Canal, the Alleghany Portage Railroad, including the newly finished railroad to avoid the inclined planes, and the canal from Johnstown to Pittsburgh, in all 276 miles of canal and 116 miles of railroad with all the property belonging to the same, which were said to have cost the state \$18,615,666. The price fixed was to be \$7,500,000 or about \$19,000 per mile, and the Pennsylvania Railroad, became the purchaser. The Act provided that if the line was sold to the Pennsylvania Railroad that company was to pay \$1,500,000 additional or \$9,000,000 in its five percent. bonds, and to be released forever from the payment of all tonnage dues and taxes on its capital stock, bonds, dividends or property, except taxes for school, borough and township purposes. The Supreme Court of the state declared this release from taxation unconstitutional. Consequently in 1861 a compromise act was passed releasing the Pennsylvania Railroad

Company from the tonnage tax on condition of its paying into the state treasury in place of the \$1,500,000, additional as aforesaid, \$460,000 annually until the year 1890, without interest, amounting in all to \$13,570,000. The company pays \$100,000 per annum of the principal of the \$7,500,000 of bonds until 1890, when it is to pay \$1,000,000 of the principal and the same sum annually thereafter until all is paid. These sums are now regularly paid and appear annually in the report of the State Treasurer, forming important portions of the revenues of the state. In 1875 the state had \$5,500,000 of these bonds in her treasury. The company is now liable to the same taxes as other railroads under the general laws of the state, and it and other corporations are the favorite subjects of taxation in Pennsylvania.

The manner in which the state of Pennsylvania managed to dispose of her other public works is one of the most extraordinary incidents in her history. A railroad had been in progress of construction for many years from Sunbury, near the centre of the state, up the West Branch of the Susquehanna River to the city of Erie. It was a hopeless undertaking to build the western portion of this road, over one of the highest summits of the Alleghany Mountains through a forest of hemlock, without population, and without any reasonable prospect of a profitable trade to induce the investment of capital in the undertaking. The governor and leaders of the legislature being West Branch men, the friends of the road conceived the idea of getting the state to sell the canals and instead of applying the proceeds to the payment of the state debt, to loan the money to the Philadelphia and Erie Railroad, then called the Sunbury and Erie Railroad Company. The scheme had nothing to recommend it but its audacity, and the fact that this wilderness railroad could not otherwise be built. Strange to say the scheme succeeded and by the Act of April 21, 1858, the governor was fully authorized at once to sell, and did immediately sell and convey all the unsold canals, namely the Delaware Division, the Lower North Branch Division, the Upper North Branch Division, the West Branch Division and the Susquehanna Division, in all 344 miles of finished canals, to this wildeat, bankrupt railroad company, which was to give the state in payment certain bonds amounting to \$3,500,000, or about \$10,000 for each mile of canal sold. The railroad company was authorized to sell the canals and the purchasers were thereby, without further legislation, to become incorporated as canal companies with full powers as such. This ended the state ownership of all canals and

railroads. With the exception of the Delaware Division all the other canals now used, belong to the Pennsylvania Canal Company, the stock of which it is said all belongs to the Pennsylvania Railroad Company, which controls it in every respect.

The Philadelphia and Erie Railroad Company being unable to dispose of the \$3,500,000 of bonds received from the sale of the canals, the legislature in 1861 allowed it to execute first mortgages aggregating \$6,000,000, which were to become prior liens, and the state took a second mortgage. By this means, the Philadelphia and Erie Railroad was finished in October 1864, having been previously leased by the Pennsylvania Railroad Company.

On March 30, 1869, the state, ever ready to oblige the railroad companies again surrendered her \$3,500,000 of Philadelphia and Erie Railroad bonds in order to help the Allegheny Valley Railroad to pay her floating debts and build its Eastern Division, commonly called the Low Grade Railroad, and agreed to receive instead Allegheny Valley Railroad second mortgage bonds endorsed by the Pennsylvania, the Philadelphia and Erie and the Northern Central Railroad companies, and bearing five percent interest. The state now received \$175,000 per annum interest on these bonds. One hundred thousand dollars per annum of the principal of said bonds is now payable annually beginning in 1875 until the whole is paid. Contrary to the usual experience of obliging and reckless endorsers the state comes out with good securities in her possession. The \$3,500,000 and the \$5,500,000 of Pennsylvania Railroad bonds received from the sale of the water line, in all \$9,000,000 of good bonds may be counted as that amount towards the final extinguishment of the state debt. The state also receives the \$460,000 per annum from the Pennsylvania Railroad Company until 1890, amounting to \$7,900,000. A bold attempt to appropriate the \$9,000,000 of bonds to the building of another West Branch Railroad up Pine Creek was only defeated a few years ago by the veto of Governor Geary for which every taxpayer in the state should remember him with gratitude. The new constitution of the state has put an effectual stop to any such operations in the future. The amount of the state debt of Pennsylvania was \$24,568,635 on the first of December, 1874. Deducting the foregoing securities, without discounting the \$460,000 annual payments, we have the actual balance of debt not provided for of only \$7,668,635.

It will scarcely be believed that in Pennsylvania there is no state tax on real estate. Almost 58 percent of the payments into the treasury are derived from taxes on

the dividends of corporations or if no dividends are declared then on the value of the stocks. There is also a tax of three cents per ton on coal mined by corporations. The receipts from the sales of the public works and licenses of various kinds make up the balance. These taxes on corporations are easily and cheaply collected, they are uniform and not easily evaded, and while the system is somewhat oppressive on the corporations, it is very popular with the people who prefer a tax on transportation to a tax on land. Pennsylvania may be considered as a state practically out of debt and free from direct taxation for state purposes.

The fashion of this world passeth away. These hundreds of miles of canals, for which Pennsylvania incurred this great debt and which were intended to be the avenues of trade for centuries have lost all their importance and a considerable part of them are now destroyed as canals and either wholly abandoned or converted into railroads. Even the boasted "main line" from Philadelphia to Pittsburgh is reduced to a detached piece of 140 miles of canal extending from Columbia to the first dam above Huntingdon. The Portage Railroad over the Alleghany Mountains now forms picturesque ruins. Not one of the canals west of the Alleghany Mountains is now used as such. The Western Division of the canal is now the roadbed of the West Penn Railroad built in 1865, running down the Kiskiminetas from Blairsville and extending to Butler. The Philadelphia and Columbia Railroad was absorbed in the Pennsylvania Railroad, its inclined planes forgotten and great numbers of its curves that formerly ornamented Chester and Lancaster Counties, converted into straight lines, better adapted to utility, as the former were to beauty. The Erie extension of the canal, finished by a company after the state abandoned it, is now again abandoned as a canal, having been purchased in 1870 by the Erie and Pittsburgh Railroad Company. The North Branch Extension from Pittston northward to the New York state line, near Athens, is wholly abandoned as a canal and constitutes the grading of the Pennsylvania and New York Railroad, an extension of the Lehigh Valley Railroad. The Junction, a canal connecting it with those of the state of New York, is also abandoned.

In 1874 the net earnings of the Pennsylvania Canal Company were \$236,186 out of \$546,328 of gross receipts, almost all the earnings being derived from the enlarged portion of the canal, received from the Wyoming coal field for which the canal company's coal mines furnished the tonnage. As a rich and prosperous man buys the property of his unsuccessful neighbors, so the railroad companies

swallow up the canals. Not only has the Pennsylvania Railroad leased the state canals, but the Philadelphia and Reading Railroad leased the Schuylkill Navigation Company in 1870, and the Susquehanna Canal south from Columbia in 1872. The Delaware and Hudson Canal Company is only a canal company in name, having really become one of the great railroad companies of the country and an extensive miner of coal. The Lehigh Coal and Navigation Company built a railroad to supersede their own canal, and the Union Canal scarcely pays its own expenses.

Supplemental note by Mr. Thomas T. Wierman of Harrisburg, Pa.

Since 1875 the following canals have been closed:

				Miles	Year
Eastern Division	Columbia	to	Duncans Island	46	1901
Susquehanna "	Duncans Island	"	Northumberland	41	1901
North Branch "	Northumberland	"	Nanticoke	60	1901
Juniata "	Duncans Island	"	Millerstown	14	1901
" "	Millerstown	"	Huntingdon	76	1889
West Branch "	Northumberland	"	Muncy Dam	20	1901
" " "	Muncy Dam	"	Lock Haven	56	1889
Union Canal	Middletown	"	Reading	77	1885
Susq. & Tide Water Canal	Havre de Grace	"	Columbia	45	1893
Delaware & Hudson Canal	Honesdale, Pa.	"	Eddysville, N. Y.	108	1900
Total				543	

In operation in 1918:

Lehigh Navigation	Coalport	to	Easton	48 miles
Delaware Division	Easton	"	Bristol	60 "
Schuylkill Navigation	Port Clinton	"	Phila.	90 "

Mileage continued in operation year 1918, total 198 miles

The following extract from Annual Report for 1899, by General Isaac J. Wistar, President, Pennsylvania Canal Company, sets forth some causes for the decline of the business operation of the Canal:

"The operations of the entire Canal line, during recent years, exhibit a steady decline from \$105,816.75 of net earnings in 1888 to an excess of expenses of \$49,382.57 in 1899. This decline is no doubt partly due to the exclusion of the Canal from any navigable outlet to tidewater through the abandonment, in 1893, of the Susquehanna Canal, extending from Columbia to Havre de Grace, by its owners, the Philadelphia and Reading Railroad Company, who found it no longer profitable to operate. But a more potent and continually increasing cause has been the steady decline in the cost of rail transportation and the increasing facilities which the railways are able to extend to their shippers by the multiplication of short branches and sidings, reaching every source of tonnage at one end of their lines and every customer's

yard, wharf or factory at the other. The comparative decline of facilities and increase of cost on the Canal have been slow and gradual, but incessant, during a series of years, and, with a trifling exception in 1897, the Canal has during the past six years, failed to earn its current expenses of operation, and has contracted a floating debt amounting, on December 31, 1899, to \$16,747.22, exclusive of a large amount of unpaid coupons. With the steady decrease in the cost of rail transportation, effected by the use of heavier power and equipment, it will probably be but a short time before the bulk of the coal heretofore transported by your Canal will be shipped by rail."